MXC SERIES LED DRIVERS

DL-100H-56A/P-MXC SPEC

V1.0

GUANGDONG DONE POWER TECHNOLOGY CO.,LTD

Features

• Class I structure

• Input voltage: 100-305 V ~ 50/60 Hz

Rated input voltage ： 200-277V ～ 50/60Hz 100W max. Output Power

Available voltage ： 100-150V ～ 50/60Hz 50W max.. Output PowerOutput power

• Efficiency :91%(Typ.)

• Constant power drive and constant current output control mode

• Metal shell structure, protection grade: IP67

• Lightning protection level: differential mode 6kV, common mode 15kV

• Function selection:

Output current is adjusted by external potentiometer (A version only)

Isolated 3 in 1 dimming (p version only)

•Lifetime design： 5 years

Applications

Road lighting、Industrial lighting、Venue lighting

Floodlight lighting、Landscape lighting 、Plant lighting

Model list

Model NO.	Input voltage	Output power	Output voltage	The default current	Eff.	T.H.D	PF
DL-100H-56A/P-MXC	200-277V 50/60Hz	100W	25-56Vdc	2.4A	≥91%	≤10%	≥0.95

Note：

1. Test conditions of the above parameters: Ta=25℃, 230Vac input, full load operation for 30 minutes;
2. When the input is less than165±15Vac,the output power gradually decreases.When the input 200-277Vac,rated power 100W. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	200Vac	230Vac	277Vac	
Input voltage range	100Vac		305Vac	Voltage below 165V+/-15VAC, derated output half power
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	0.95	-	-	@230Vac full load
T.H.D.	-	-	10%	@230Vac full load
Input current	-	-	0.7A	@200Vac full load
Inrush current	-	-	70A	230Vac, cold start (25℃)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current DL-100H-56A/P-MXC	-	1.8A	-	
Output current range DL-100H-56A/P-MXC	1.34A	-	2.5A	
Output voltage range DL-100H-56A/P-MXC	25V	-	56V	
Rated power(100-180Vac)	-	50W	-	Start derating to half power when the input voltage is less than 165 ±15Vac
Rated power(200-277Vac)	-	100W	-	
No-load voltage DL-100H-56A/P-MXC	-	-	75V	
Efficiency@200Vac DL-100H-56A/P-MXC	90%	91%	-	full load@200VAC

Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac DL-100H-56A/P-MXC	90%	91%	91.5%	full load@230Vac
Output Current Ripple	-	5% Iomax	-	100% load，20 MHz BW； Ripple =rms/ average
Accuracy of output current	-5%	-	+5%	
Line regulation	-3%	-	+3%	
Load regulation	-3%	-	+3%	
Starting time	-	-	500ms	full load@230Vac

Note: 1.The output current range is limited by the input and output voltage, please refer to “I-V WORKING AREA” for details.

2. When the input voltage is between 150 and 180VAC, the output power may be between half load and full load due to the conversion threshold deviation. Please pay special attention.

Dimming characteristic

Dimming function		Min	Typ.	Max	Instructions
1-10V Dimming (Optional)	Safe applied voltage range	0V	-	12V	When the external voltage is ≥12V, the dimming will fail
	Dimming output range	10%	-	100%	-
	Rated dimming voltage range	1V	-	10V	It can be set to negative dimming mode through program setting
PWM Dimming (Optional)	PWM high level	9.5V	-	10.5V	-
	PWM low level	0	-	0.3V	-
	PWM frequency band	300Hz	-	2000Hz	-
	PWM duty cycle	10%	-	99%	Output full power at 99% duty cycle
Resistor Dimming (Optional)	External resistance value	10KΩ	-	100KΩ	-
	Dimming output range	10%	-	100%	-
Multiple time-controlled dimming (optional)	MCU control		Set segment dimming function through program		Working mode
	Timer control		It is divided into six segments by default and can be customized		24H to achieve a cycle

Note:

1. Output current of dimming port: 100uA (typical value);
2. The P version is 1-10V dimming (0V can be turned off). The maximum voltage of the dimming port is 12V. If the external power supply voltage exceeds 12V or the signal cable is inverted, the power supply will be damaged;
3. Dimming default setting is three in one positive logic dimming (programmable software can be set to timing dimming, 0-5V or other voltage dimming);
4. When set to positive logic dimming function, the 0V dimming is turned off, and the output voltage is 0.46*Vomax after the dimming is turned off. Be careful when using this function, but customers are advised to use 1-10V dimming.
5. When setting negative logic dimming, the default output is 100% when the dimming is suspended. Negative logic dimming cannot be turned off. When the port voltage of the dimming is greater than 10.5V, the maximum power output of the power supply will be achieved.

Protection

Function	Function instructions
Input under-voltage protection	When the input voltage is less than 165 ±15Vac, the output power gradually decreases.
Output overload protection	Protection mode:hiccup mode,recovers automatically after fault condition is removed.
Output short circuit protection	Hiccup mode:recovers automatically after fault condition is removed
Over temperature protection	Self-recovery type：when the housing temperature is greater than 90℃, the output power decreases gradually.
Output over-voltage protection	Protection mode: Hiccup mode or clamped in output highest voltage , the product is not damaged，LED driver works normally after fault condition is removed.

Note:

1. Unless otherwise specified, all specifications and parameters shall be measured at the conditions of 230Vac (50Hz), rated load and 25℃ of ambient temperature;
2. Including setting error, line regualtion and load regualtion.

Environmental

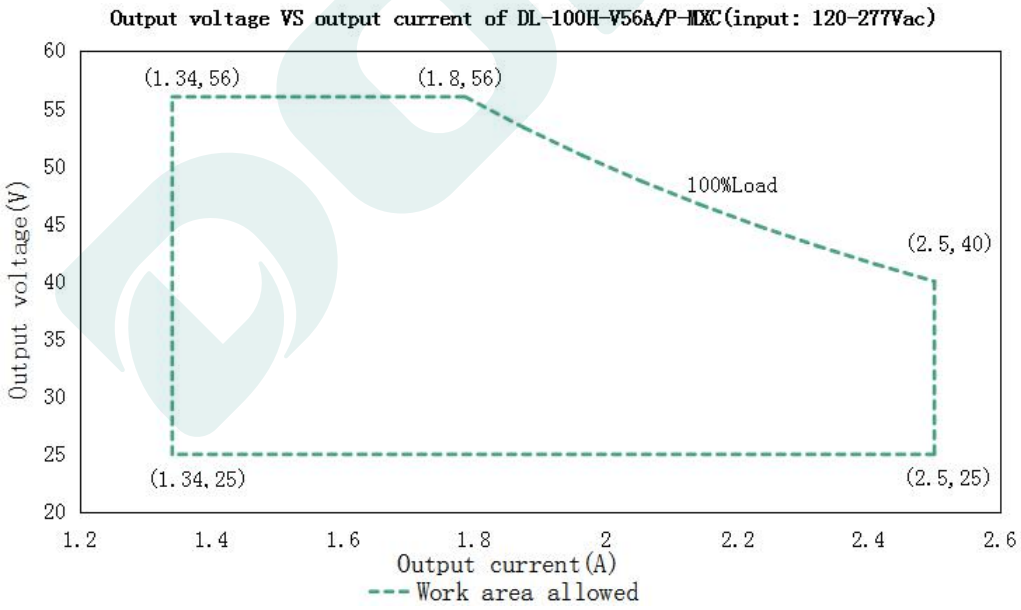
Environmental categories	Parameter
Working temperature	-40 ~ +55℃@200-277Vac, -40 ~ +45℃ @120-200Vac (refer to "Life Curve ")
Max.Case Temp.	-40 ~ 90℃
Working humidity	20 ~ 95% RH, non condensing
Storage temperature、humidity	-40 ~ +80℃, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25℃)
Lifetime	50000 hours @Tcase≤75℃,230Vac, 80% Load, Please refer to "Tcase VS Lifetime" section

Safety and EMC

Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13 UL8750;
EMC	EN 55015、EN 61000-3-2 、GB/T 17743、GB17625.1、 EN 61000-3-3
Surge protection	Differential mode L-N ±6KV（2 ohm）,common mode L，N-PE± 15 KV (12 ohm)；Refer to IEC61000-4-5 2014 Criterion B
High-pot test	I/P-O/P:3.75KVac I/P-PE :1.5KVac O/P-PE : 0.5KVac I/P-DIM:1.5KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-PE:100MΩ / 500VDC; I/P-O/P:100MΩ / 500VDC / 25℃/ 70% RH
Leakage current	<0.7mA@277Vac

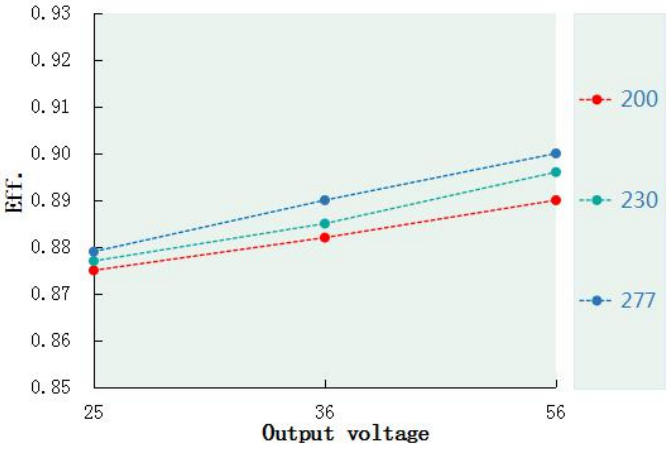
Note: 1.The driver is considered as a component that will be operated in combination with the final equipment. Since EMC performance will be affected by the complete installation,the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

I-V Working area

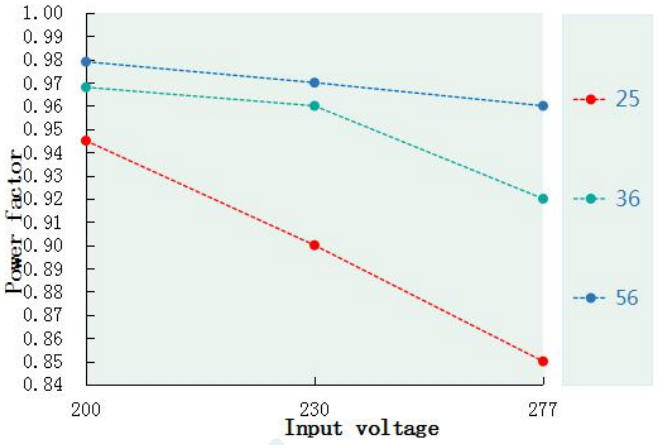


Load	Output								
Load working Voltage	25V	28V	32V	36V	40V	44V	48V	52V	56V
Io_MAX	2.5A	2.5A	2.5A	2.5A	2.5A	2.27A	2.08A	1.92A	1.8A
Po_MAX	62.5W	70W	80W	90W	100W	99.88W	99.84W	99.84W	100W

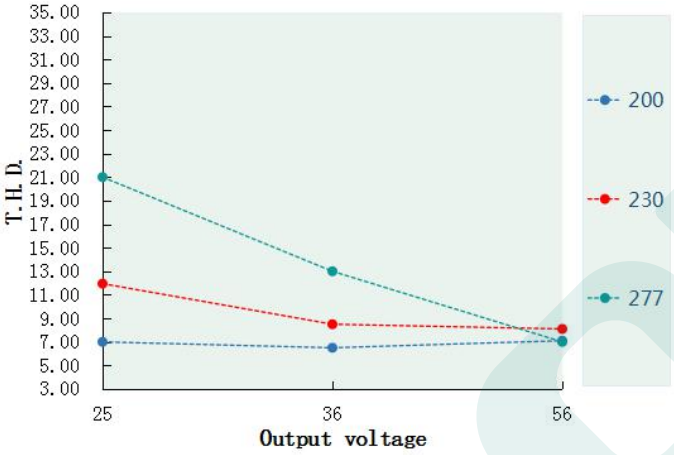
Eff. VS Output voltage(DL-100H-56A/P-MXC)



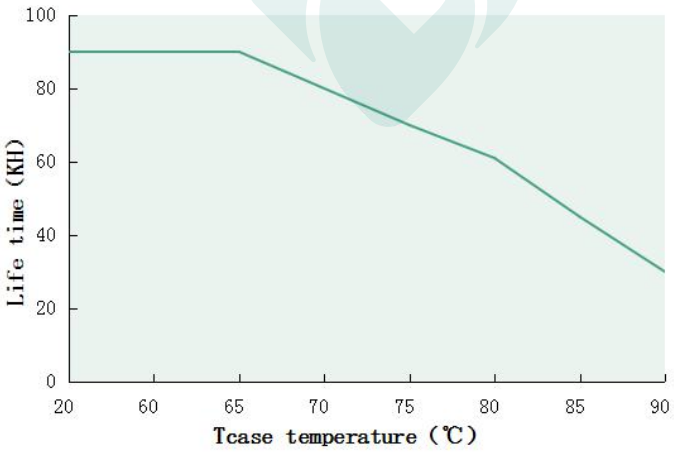
Power factor VS Input voltage((DL-100H-56A/P-MXC)



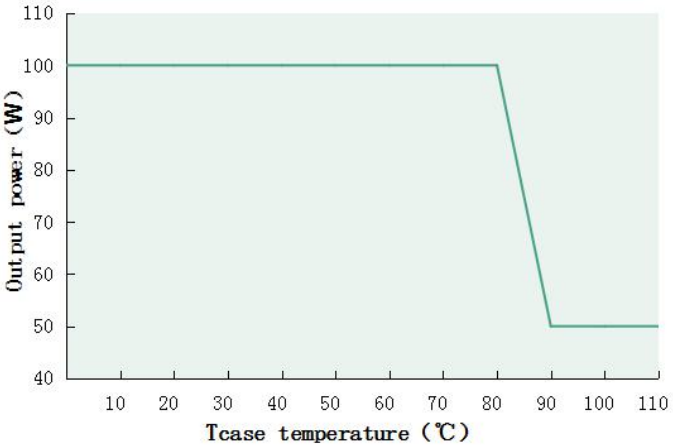
T.H.D. VS Output voltage(DL-100H-56A/P-MXC)



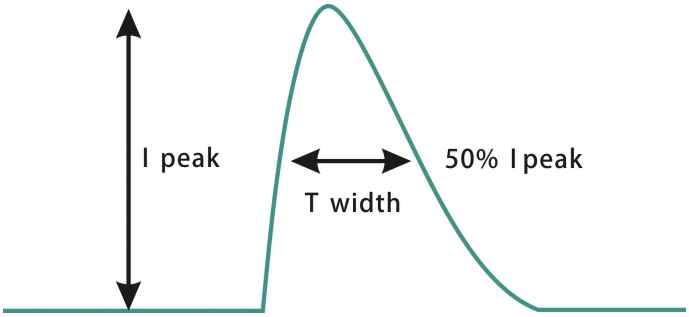
Tcase temperature VS Lifetime(DL-100H-MXC)



Output power VS Tcase temperature(DL-100H-MXC)

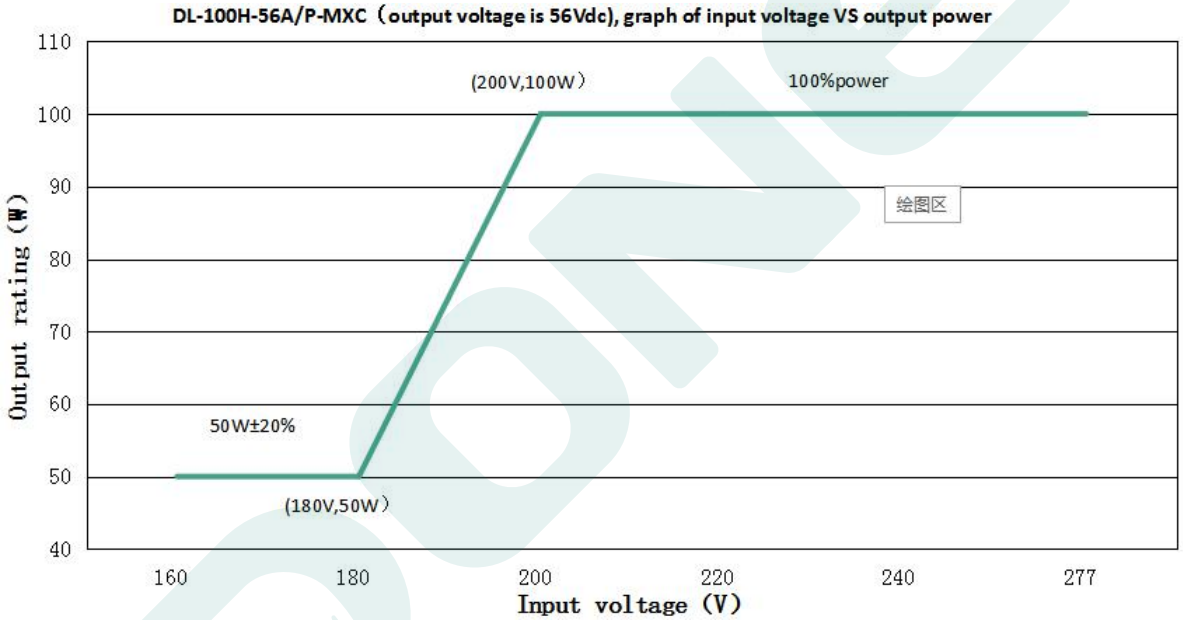


Inrush Current(DL-100H-MXC)



Input voltage	Peak current	T(@50% Peak current)
200Vac	40.5A	188us
230Vac	47.7A	188us
277Vac	61A	206us

Output power VS Input voltage



DL-100H-56A/P-MXC(When the output voltage is 56Vdc,the rated output current value and output power corresponding to different input voltage)							
Input Voltage	160Vac	180Vac	200Vac	220Vac	230Vac	240Vac	277Vac
ssIout	0.9A	0.9A	1.8A	1.8A	1.8A	1.8A	1.8A
Pout	50W	50W	100W	100W	100W	100W	100W

Note:

1.Input voltage will fluctuate,resistance error and other factors.At the decrease or increase of power (Vin=200Vac),it will move left and right,with the range of 200V±10% .

2.When the input voltage is 90-200Vac,the output power range is 50W±20%.

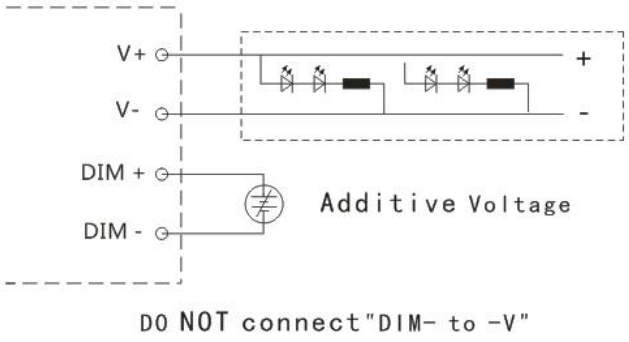
Dimming operation

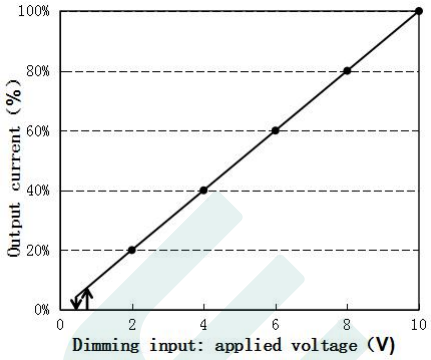
※ Three-in-one dimming function (P version only)

A. connect a resistor 10K-100K or 1-10V DC voltage or 10V PWM signal between DIM+ and DIM- to adjust the output current.

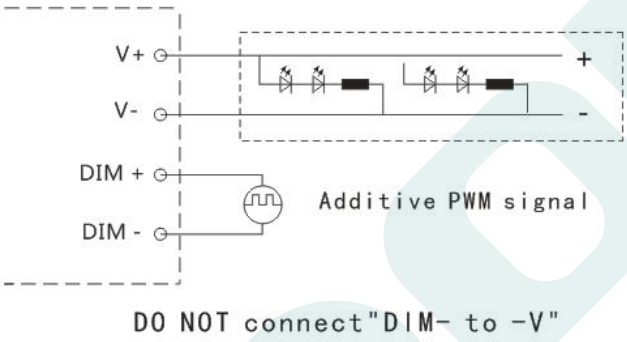
B. output current of dimming port: 100uA (typical value). （to be determined!）

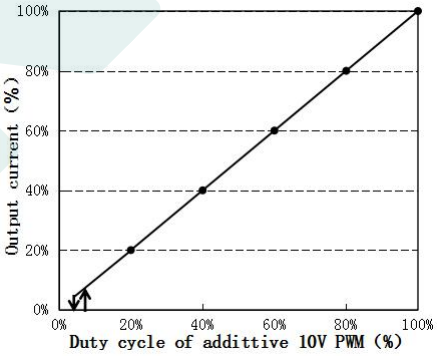
◎ With an applied voltage of 0-10V:



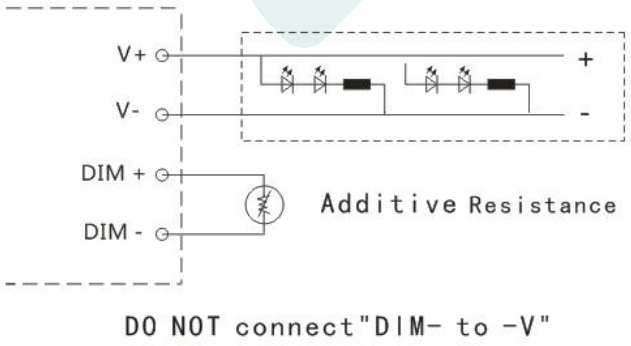


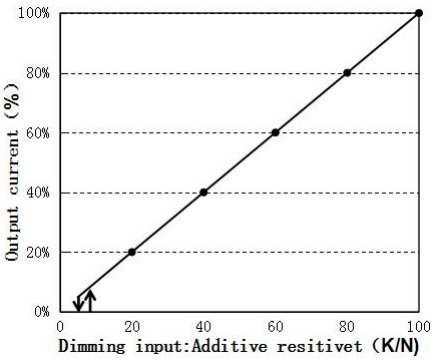
◎ Applying additive 10V PWM signal（Frequency range：300Hz-2K Hz）：





◎ With an additional 10K-100K resistor:





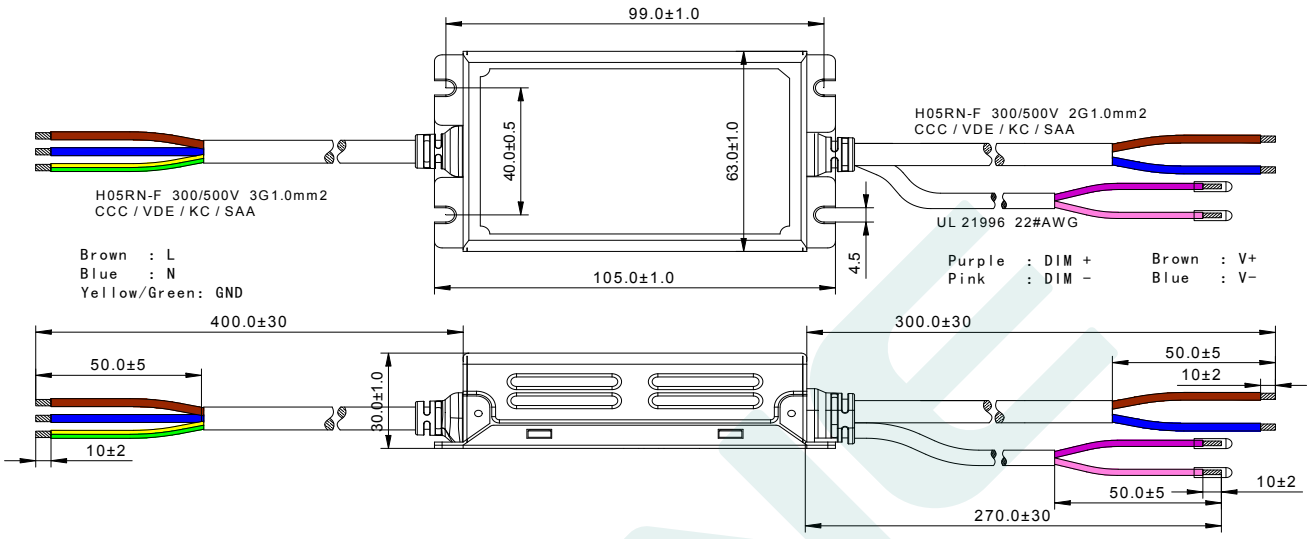
Note:

1. Positive and negative logic dimming can be programmed.
2. Dimming off only applies to positive logic. For other requirements, please contact technical personnel.

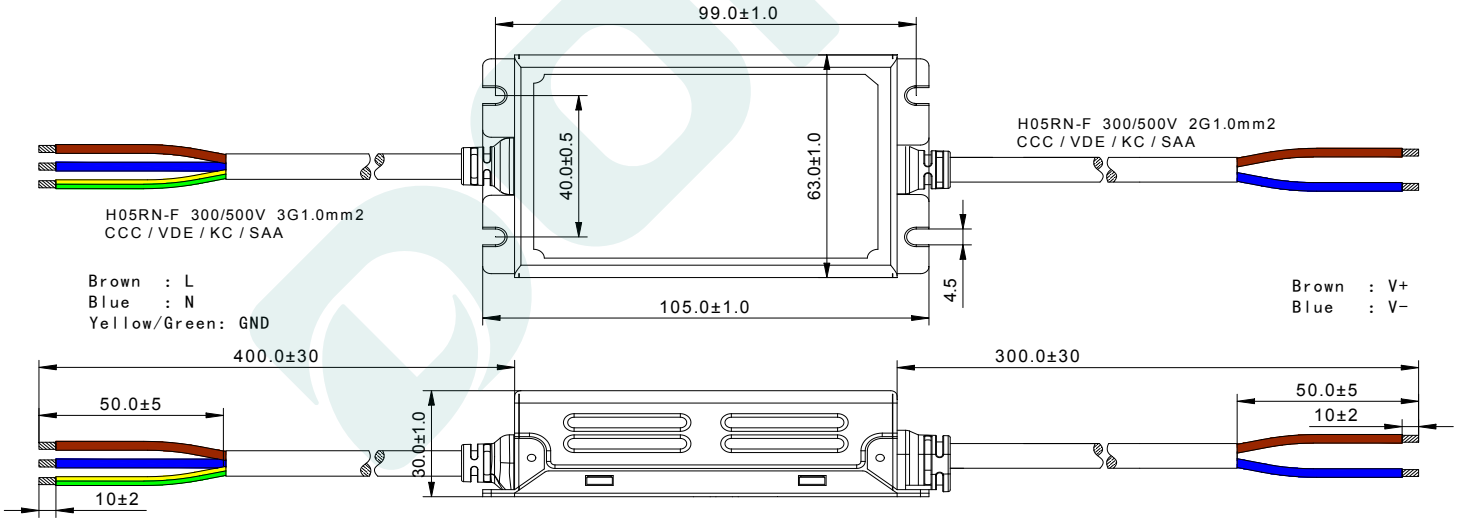
Mechanical specifiation

Size（mm）	L105*W63*H30

DL-100H-56P-MXC



DL-100H-56A-MXC

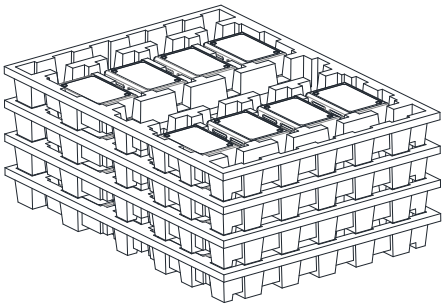


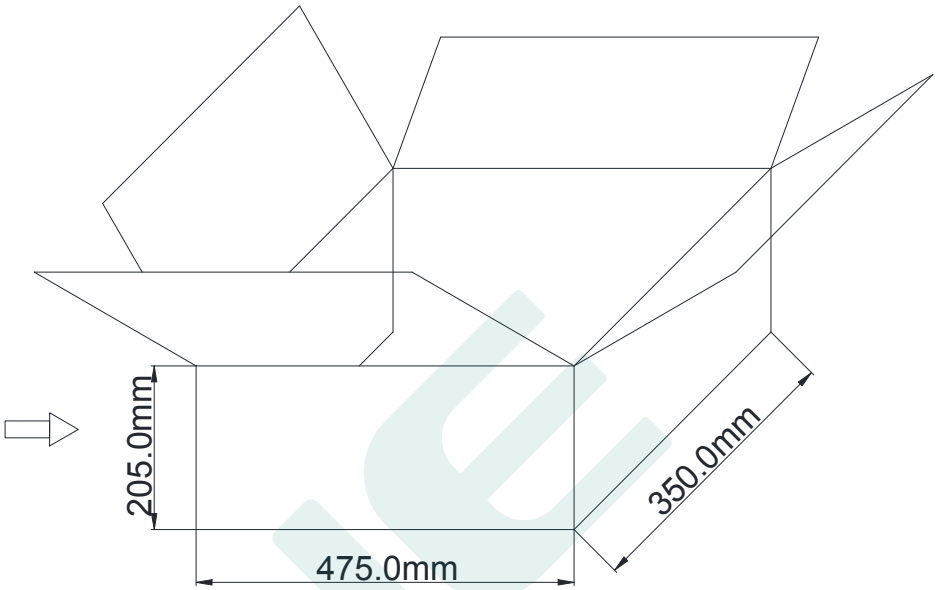
Weight

Weight	800 g

Packaging

Packaging（mm）	L475*W350*H205





Note：One Carton 4 layers and 8 pcs each layer, total 32pcs/carton.

Note:

1. According to the certificate obtained by the LED DRIVER, the LED DRIVER with the English label is sold in Europe, America and India.
2. The LED DRIVER with Chinese label is only used for China market.

Version

DATE	DESCRIPTION	REV.	CHECK
2024.02.29	Initial version.	V1.0	2024.03.01 13:51:33 +08'00' LQ 2024.03.01 13:59:35 +08'00'

MANUFACTRUER		
EDIT	CHECK	APPROVE
YQS 2024.02.29 15:15:23 +08'00'	GZK 2024.02.29 15:36:47 +08'00'	数字签名者：张鸿生 DN：cn=张鸿生, o, ou, email=978425630@qq.com, c=<无 日期：2024.03.05 16:05:51 +08'00'